


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P205-0106WO		FOR FURTHER ACTION		See Form PCT/PEAA16
International application No. PCT/JP2005/007280		International filing date (day/month/year) 08.04.2005		Priority date (day/month/year) 14.04.2004
International Patent Classification (IPC) or national classification and IPC INV. H04L12/28				
Applicant CANON KABUSHIKI KAISHA et al				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 13.01.2006 ✓		Date of completion of this report 11.04.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Lombardi, G Telephone No. +49 89 2399-7633		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

 International application No.
PCT/JP2005/007280

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-36 as originally filed

Claims, Numbers

1-6, 8, 9 as originally filed

7 received on 16.01.2006 with letter of 13.01.2006 ✓

Drawings, Sheets

1/8-8/8 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
 4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/JP2005/007280

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 1-9
No: Claims

✓

Inventive step (IS)

Yes: Claims 1-9
No: Claims

✓

Industrial applicability (IA)

Yes: Claims 1-9
No: Claims

✓

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/JP2005/007280

**Concerning section I,
Basis of the report**

1. The following documents are referred to in this communication:

D1: US 2004/0009769 A1 ✓

D2: US 2004/0063458 A1 ✓

D3: US 2003/0142652 A1 ✓

} ISO 2 A1"

**Concerning Section V,
Reasoned statement with regard to novelty, inventive step or industrial applicability**

1. Technical field

The present invention relates to a communication control method (**claim 1**) for controlling communication between wireless communication apparatuses that are capable to communicate wirelessly in a first communication mode in which communication is performed via a base station (eg. "infrastructure mode") and in a second communication mode in which communication is performed directly (eg. "ad-hoc mode"), and to corresponding apparatuses (**claims 2 and 7**).

1.1 State of the art

Wireless communication apparatuses which are capable of communicating in an ad-hoc mode and in an infrastructure mode are well known in the art.

Document **D2**, which is regarded as the closest available prior art, discloses a method for automatically switching the operation of a wireless communication apparatus between said infrastructure and said ad-hoc mode.

According to the disclosure of D2, when an access point detects a packet transmitted from said wireless communication apparatus towards a second apparatus which is also capable of performing communication in an ad-hoc mode, the access point

automatically searches for available channels in the ad-hoc network and communicates this information to the wireless communication apparatus, so that it can initiate a communication towards said second apparatus in said ad-hoc mode. Document **D3** also discloses another similar method for switching the operations of a wireless communication apparatus from an infrastructure to an ad-hoc mode.

1.2 The technical problem

Although the method disclosed in the closest prior art allows a switching from an infrastructure and an ad-hoc mode with the allocation of relevant physical network resources, there is no possibility to verify if there is software and function compatibility among the two apparatuses which are thus put in communication in said ad-hoc mode. Furthermore the wireless apparatus has no possibility to decide the desired communication mode according to the desired services and functionalities to be exchanged with said second communication apparatus.

The technical problem may be thus formulated as to allow a more flexible decision about whether switching the communication mode to be employed in communication by said wireless communication apparatus with said second apparatus.

1.3 The invention

According to the present invention, **(i)** a connection is established between said first and second wireless communication apparatus in the first communication mode ("the infrastructure mode"), and **(ii)** information is exchanged between the two apparatuses in order to determine whether the first wireless communication apparatus possesses a specific function.

If it is the case, **(iii)** the communication mode is switched to the second communication mode ("the ad-hoc mode").

This solution allows to perform an intelligent switching between said two communication modes in accordance to a specific function determination process between said two communication apparatuses.

This solution to the above discussed technical problem is neither disclosed nor rendered obvious in any of the cited prior art documents.

Documents D2 and D3 conversely disclose alternative switching techniques which do not provide the features of the present invention.

Consequently, the subject-matter of the independent **claims 1, 2 and 7** is considered to be novel, inventive and industrially applicable according to Articles 33(2), (3) and (4) PCT.

- 1.4 The same applies to the dependent claims 3 to 6 and 8 to 9 which relate to further implementing details of the apparatus and method of the independent claims and therefore equally meet these requirements of the PCT.

2 Remarks concerning formal defects in the international application:

- Contrary to the requirements of Rule 5.1 (a), (ii) PCT, the relevant background art disclosed in document D2 is not mentioned in the description, nor is this document identified therein.
- Contrary to the requirements of Rule 6.2 b) PCT the features cited in the independent claims are not provided with reference signs in parentheses to increase the intelligibility of the claims.
- Independent **claims 1, 2 and 7** are not in the **two-part form** in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- The vague and imprecise statement in the description on page 35, lines 21 to 23 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.

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